
Game Dev @ BioWare

Career Development Report (Work Term 2)

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Contents

0	Introduction	1
0.1	Outline	1
0.2	Scope	1
0.3	Industry	1
0.4	Company	1
1	Work Term Industry	2
1.1	Industry History	2
1.2	Economic Status	2
1.3	Geographics & Concentrations	2
1.4	Opportunities for Engineers	3
1.5	Employers in the Industry	3
1.6	Economic Factors	3
1.7	Political Factors	3
2	Obtained Skills	3
2.1	Technical Skills	4
2.2	Non-Technical Skills	4
3	Desired Future Industry	4
3.1	Industry History	4
3.2	Economic Status	4
3.3	Geographics & Concentrations	4
3.4	Opportunities for Engineers	4
3.5	Employers in the Industry	4
3.6	Economic Factors	4
3.7	Political Factors	4
4	Technical & Transferable Skills for Senior Work Terms	4
4.1	Self-Marketable Skills	5
4.2	Skills Required to Succeed	5
4.3	Plan to Obtain	5
	Conclusion	5

List of Figures

1	BioWare logos	2
2	Video game as career	3

List of Tables

0 Introduction

0.1 Outline

This report serves to probe the progression of career development. This report is written with intent to achieve helping us gauge our current desired career path by reviewing the skills obtained throughout the work term, as well as future desired skills that would be necessary for future careers.

The report is broken down into four parts to help us understand what is it we need to proceed in our career development: industry in current work term, current skills being obtained, desired future industry, and transferable skills that might aid us reaching there.

The report will also briefly describe the company and the industry it takes position in. The studio that I work for is BioWare, which is a subsidiary of a larger publisher, Electronic Arts (EA).

0.2 Scope

The scope of report consists of analysis of skills and duty pertained to me and future desired skills. The report will not include details about the game, engine, or other technology used during the work term that helped me obtaining skills or reach my objectives.

0.3 Industry

EA or BioWare, like many other studios or publishers exist in the market right now falls into the consumer entertainment industry. The products produced is associated with Microsoft and Sony as they develop the hardware the games will run on. Future industries I wish to work in consist of electronics development or robotics and control systems.

Work Term Industry (section 1) provides insight the industry with which we are currently working and competing in. This section outlines the company's position and its competitions in the gaming and or online entertainment and content delivery industry.

0.4 Company

BioWare is a game development studio founded in 1995 by three medical doctors in Edmonton, Alberta[3]. Since the establishment, BioWare has developed numerous titles including the Mass Effect and Dragon Age franchise as well as the massive multiplier online (MMO) game Star Wars: The Old Republic. BioWare is currently developing Anthem, the upcoming game set to release in February, 2019.

The company is now a division of EA, which is an American video game publishing company. This allows for cross-studio sharing of technology. Such as using the Frostbite engine (game engine developed by another EA studio, DICE, in Sweden) instead of using the in-house engine BioWare developed [4][5]. In 2018, BioWare went through rebranding that replaced the logos (figure 1).[3]



(a) BioWare logo in 1995



(b) BioWare logo prior to rebranding



(c) BioWare logo in 2018

Figure 1: BioWare logos

There is a pipeline of games the studio outputs, the latest one being Anthem, showcased at the Electronic Entertainment Expo (E3) in 2017 and 2018. The game so far has won many E3 awards.

To date, there are 800 active employees working at BioWare ranging from artists to programmers. My position is an associate developer on the UI/UX team for the game Anthem. Mostly developing engine tools, and elements the scriptwriters and artists can then use to add feature into the game.

1 Work Term Industry

BioWare is computer software company that develops video games for PCs, XBOX, and PlayStation. Thus we fall under *Services - Computer Programming / Software* industry.

1.1 Industry History

The history of video game industry started in the 1970s when computers are powerful enough to run games even though videos existed since the 40s. Recently, the video game industry has expanded to many platforms including social media, mobile, augmented reality (AR) and virtual reality (VR).[10][11]

1.2 Economic Status

Earlier games in the industry are generally cheap inexpensive to make because of small teams and low demand for quality from the consumers. In recent decades however, large budget games (A.K.A AAA or Triple A games) consists of large development teams and usually takes a year to three year to develop a single game. This is due to increased technological complexity.[9]

In 2017, the video game industry was valued at 17.68 billion USD. [11].

One competitor in the industry, Rockstar, and their most recent products Grand Theft Auto V (GTA 5) has become the most profitable product in the industry [1]. With a total revenue of \$6 billion, it has made "more money than any film, book, or game".

1.3 Geographics & Concentrations

The industry applies worldwide. The USA is one of the largest producer of video games, most companies and publishers including Electronic Arts, Blizzard - Activision, and Valve (they own the world's largest online video game distribution platform - Steam [8]).

The largest market is China, with MMO games on PC being the largest category [12][13].

1.4 Opportunities for Engineers

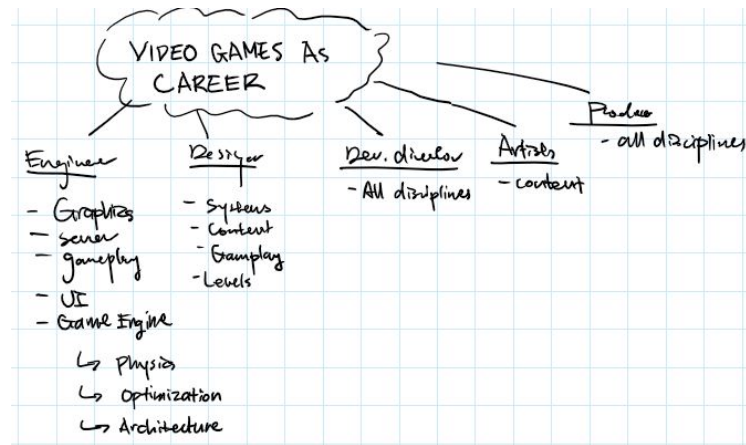


Figure 2: Video game as career

1.5 Employers in the Industry

If the industry is scoped to the video game industry then:

Electronic Arts - BioWare - DICE - Other studios (for EA sports)

Microsoft

If the industry covers whole of computer programming / software then:

Google Amazon etc.

1.6 Economic Factors

Technological advance - Increased demand

1.7 Political Factors

- Video game addiction in Asian countries
- Video game esports influence in SKorea

2 Obtained Skills

This section provides an overview of my technical and non-technical skills gained at BioWare over the course of the work term.

The obtained technical skills include: - Gained more programming experience in C++ - specifically, OOP and design patterns for games engines (render thread, simulation thread, UI handling) - Gained experience in writing C# for applications - Increased learning skill of using propriatery engine editor - Visual scripting - Use python to write upgrade script for game assets - Understood the structure and serialization of these assets, as well as the entities and links within - Use enterprise level version control Perforce - Work with packages and modules that are separated from the game codebase - Agile methodologies including code review, creating and resolving JIRA tasks - Contributing to the documentation (confluence, wiki, etc) - Improved debugging skills in Visual Studio - Writing code that complies with coding standard

Social skills: - Asking for help from anyone in the office - Participating in design review

2.1 Technical Skills

2.2 Non-Technical Skills

3 Desired Future Industry

I have three options:

1. (Depth) - Continue down the software development path on UI/UX or app development. Although drifted from area of study, could be a viable option to consolidate existing skills and experiences

Possible industries: - Software development (Microsoft, Google, Startups) - Video game industry (Coming back to EA or other game publishers)

Benefits: - Already know a lot of things - Easier integration and on boarding for future opportunities

Tradeoffs: - The experiences and skills in this particular area snowballs: because the more experiences I have as software developer, the more likely I would get a position that is software developer in the future - Not very hands on, sometimes could get very abstract => less personal satisfaction.

2. (Breadth) - Try something else to expand my set of skills to different areas. - Include and apply knowledge more related to area of study (electronics, mechanical, controls, robotics, PCB, etc)

Possible industries: - Electronics and hardware (Intel, etc) - Robotics or control systems

Benefits: - Experience new things, gain insight and additional interests - Technical experience is not fixated on software development - More hands on

3. (Academic or Research) - Research positions (universities, NRC, CSA, etc.) - Research discipline can be both computer science or research regarding electronics or control systems

Benefits: - Research experience - Grad school recommendations

3.1 Industry History

3.2 Economic Status

3.3 Geographics & Concentrations

3.4 Opportunities for Engineers

3.5 Employers in the Industry

3.6 Economic Factors

3.7 Political Factors

4 Technical & Transferable Skills for Senior Work Terms

Technical communication skills - Documentation contribution - Coding standard

Learning Skills - Asking for help - Knowing how to get help -

Social skills - Small talks

4.1 Self-Marketable Skills

4.2 Skills Required to Succeed

4.3 Plan to Obtain

Conclusion

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